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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/689,262

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Min-Chieh Chou

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Akin Gump LLP - Silicon Valley
3000 El Camino Real
Two Palo Alto Square, Suite 400
Palo Alto, CA 94306

EXAMINER

NGUYEN, TUNG X

ART UNIT

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2829

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/689,262	Applicant(s) CHOU ET AL.	
	Examiner TUNG X. NGUYEN	Art Unit 2829	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 March 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2,3,5,7,13,22,24,25 and 34-37 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2,3,5,7,13,22,24,25 and 34-37 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>6/16/08</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 3, 7, 22, 25, and 34-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshida et al. (u.s.p 6,710,608 heretofore Yoshida).

As to claim 7, Yoshida discloses in Figs. 16-24, a probe module comprising: a probe base (116E, 301E, 300E) having a plurality of conductive metal traces (301E, 300E); a plurality of completely exposed probe pins (3aE) attached to the probe base, each of probe pins comprising an elongated body (3E) wherein at least part of the elongated body is bonded to the plurality of conductive metal traces (301E, and portion after 301E) of the probe base; a flexible circuit interconnect device (300E) for connecting the plurality of probe pins to an inspection apparatus (inherent); and a flexible compression arm (111E, 400E) attached to the probe base (via 130E) and configured to engage the plurality of probe pins (fig. 20); and at least one adjustment element (130E) provided on the probe base that adjusts the compression arm (112E) against the plurality of probe pins (3aE).

Yoshida is silent about the adjusting of the contact angle of the probe pins.

Note that, the bolt 130E in combination with 112E and the elastic film 400E as shown in Figs. 20-24 would press on the end portion of contact pins 3aE bent in the S,

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S1, and S2 positions (as shown in Figs. 20-24) for good contact to the terminals of DUT (col. 25, lines 30-40). Therefore, it would have been obvious to a person having an ordinary skill in the art at the time of the invention was made to recognize that when the compression arm is pressed against the plurality of the probe pins by the tightening of the adjustment element (130E), the contact angle of the probe pins is accordingly changed in positions (as shown in Figs. 20-24) for good contact to the terminals of DUT (col. 25, lines 30-40).

As to claim 3, Yoshida discloses in Figs. 16-24, the circuit interconnect device (300E) comprises a plurality of conductive probe circuits (col. 24, lines 45-55) provided on the probe base in electrical contact with the plurality of probe pins (3aE), respectively, and a flexible circuit board (ribbon cable after 300E).

As to claim 22, Yoshida discloses in Figs. 16-24, the flexible circuit board (ribbon cable after 300E) couples the probe pins (3aE) to a testing unit (inherent) via the conductive metal traces (300E).

As to claim 25, Yoshida discloses in Figs. 16-24, the probe pins (3aE) include an elongated (3E) arm body (fig. 17) such that at least a part of the elongated arm body is attached with the probe base (116E).

As to claim 34, Yoshida discloses in Figs. 16-24, the adjustment element is a screw (130E).

As to claim 35, Yoshida discloses in Figs. 16-24, the flexible compression arm comprises plastic (400E).

As to claim 36, Yoshida discloses in Figs. 16-24, the flexible compression arm comprises metal (111E).

As to claim 37, it is well-known that the pitch between adjacent ones of the plurality of the probe pins is about 30 μm in order to correspond to the pads of the DUT during test. Furthermore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to choose appropriate value of the pitch between adjacent ones of the plurality of the probe pins is about 30 μm for the benefit of corresponding between the probe pins to the pads of the DUT during test, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

3. Claims 2, 5, 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshida et al. (u.s.p 6,710,608 heretoeafter Yoshida), in view of Farworth (u.s.p 6,362,642 heretoeafter Farworth).

Yoshida discloses in Figs. 16-20, all of the claimed limitations except for a probe pin head having a generally tapered probe pin tip, or semi-spherical probe pin tip. However, Farworth disclose in Figs. 9-10, the pogo pin having a tapered or semi-spherical probe pin tip (14) for easily contacting a pin of device under test (8). Therefore, it would have been obvious to one having an ordinary skill in the art at the time of the invention was made to modify the probe of Yoshida, and provide the probe with tapered or semi-spherical tip, as taught by Farworth for easily contacting a pin of device under test during testing (8).

4. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshida et al. (u.s.p 6,710,608 hereinafter Yoshida); in view of Di Stefano (u.s.p 6,426,638 hereinafter Di Stefano).

As to claim 13, Yoshida discloses in Figs. 16-20, all of the claimed limitations except for a plurality of probe pins with a tetrahedral probe pin tip. However, Di Stefano discloses in Figs. 3A, a probe pins with a tetrahedral probe pin tip for a strong contact between the probe and device under test. Therefore, it would have been obvious to one having an ordinary skill in the art at the time of the invention was made to modify the probe of Yoshida, and provide the probe with a tetrahedral tip, as taught by Di Stefano for firmly contacting the device under test during testing.

Response to Arguments

Applicant's arguments filed 3/19/08 have been fully considered but they are not persuasive.

In the "remark" on pages 6-11, the Applicant argues that Yoshida does not teach the flexible compression arm against the plurality of probe pins to adjust a contact angle of the probe pins; the combination of Yoshida in view of Farnworth and Di Stephano will also fail.

In the response, the Examiner disagrees about the issue for the following reasons:

In the Figs. 20-24, the elastic film (400E) is sandwiched between the first projection 112E of the top clamp 111E (combined with the screws 130E in Fig. 21) and the resin film 201E and projects over the front end portions of the contact pins 3aE, in

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order to press the front end portions of the contact pins 3aE against the terminals of the LCD 90 when the front end portions of the contact pins 3aE are bent in the S, S1, and S2 positions (Figs. 22) (col. 25, lines 29-36). Therefore, it would have been obvious to a person having an ordinary skill in the art at the time of the invention was made to recognize that when the compression arm is pressed against the plurality of the probe pins by the tightening of the adjustment element (130E), the contact angle of the probe pins is accordingly changed (as shown in Figs. 20-24) for good contact to the terminals of DUT (col. 25, lines 30-40).

Therefore, Yoshida would have been obvious to teach the flexible compression arm against the plurality of probe pins to adjust a contact angle of the probe pins.

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Yoshida disclose the probe device, Di Stephano, and Farnworth disclose the probe device for testing the DUT using probing. Therefore, these references would have been obvious to be combined with each other.

Conclusion

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TUNG X. NGUYEN whose telephone number is (571)272-1967. The examiner can normally be reached on 8:30am-5:00pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ha T. Nguyen can be reached on (571) 272-1678. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/T. X. N./
Examiner, Art Unit 2829
7/1/08

/Ha T. Nguyen/
Supervisory Patent Examiner, Art Unit 2829